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inches in diameter, was hacked out. The piece of wood was brought back to the settlement and the whole morning was spent in hacking it down to the proper size. First a cutlass was used, then a wooden-handled knife. A series of hacks or cuts about one-half inch apart was made along the surfaces to be reduced. Then the wood was reduced by a shaving motion of the blade. The afternoon was spent in smoothing down the wood to an oval shape. For this purpose the edge of the knife was used as a scraper, as well as an old cassava grater. Great care was spent in getting the proper taper, and the balance and resiliency of the bow were tested by frequent flexions. Then the ends were determined, with due regard to symmetry, and the pegs whittled at the head and foot. The next morning was spent in making the groove in the back with a broken piece of mirror glass. Then the bow was smoothed all over with a purumo leaf, which is rough and approximates the action of sand paper. Following this the bow was taken down to the creek and placed in the water, where it was left for three days to be seasoned. On the fourth day it was removed and rubbed all over with aporokune gum, which is said to toughen it as well as improve its appearance. Then it was strung.[1]

The bow string is made of the fibre of the kraua grass, (*Bromelia* sp.) which is specially cultivated in the fields for this purpose. The long semi-stiff leaves are shredded through a loop of string attached to a post of the house, as described by Roth[2]. The fibre is then spun into three-twine string by rolling it on the thigh.

Arrows are of several types, but each consists of the following parts (Plate 3, *b*). The head (piatura) is, in these days, made of an old piece of iron, usually a discarded cutlass filed down to the proper shape, or of wood. The epuru is the small piece of wood into which the base of the head is set; on harpoon types the epuru end is pointed and fits into a socket at the base of the head; it is usually made of wawkonse wood. The epuru is set into the end of the hollow shaft (*mapuru*), which is made from a reed-like plant cultivated in the fields for this purpose and called by the Caribs mapuru epui (*Gynerium saccharoides*). The shaft is usually split in receiving the epuru and must be bound around with fine kraua

[1] Bow, urapa; head, apono; foot, opinyoni natari; bow string, urapa amoti; strengthening string, shyatumamoti.

[2] Roth, 1924, *An Introductory Study of the Arts, Crafts, and Customs of the Guiana Indians*, p. 114.

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largest and juiciest; ekupu, slightly smaller than the preceding type; toshiare, long and thin, the sweetest of the four types; kuyarimyo, longer, thinner, and slightly sourer than toshiare. In planting, shoots are taken from the roots of mature plants and put in holes made in the ground with the digging stick. The plant bears in about a year after planting. The fruit is picked when it is yellow, and the skin removed with a knife. The fruit is mostly used to make an alcoholic drink called tanemu, the pulp being grated into a juicy mash and allowed to set for several days after having been mixed with water. Occasionally the ungrated fruit is eaten raw.

Three varieties of yams (napoi)[1] are known to the Caribs; apotononognapoi, the large white yam; tawimididishye, the small white yam; tupununapoi, the purple yam. They may be planted at any time of year and ripen in ten to eleven months, i.e. when the leaves die. For food they are eaten boiled, after being peeled. A drink, napoishuru, is also made from yams, as described in the chapter on stimulants.

Tanyas and eddoes are also grown in the fields and are boiled in the pot after being peeled.

Sugar cane grows in every field. It is planted by inserting a shoot into a small hill of loose earth. It is eaten as a confection, being chewed like a stick of candy after the outside bark has been removed. The juice is also expressed in the cane mill (Plate 8, *b*) and used as an ingredient in cassiri and other alcoholic drinks.[2]

Two types of "punkin" or squash (wayoma) are to be found in Carib fields: apotono wayomo, large and spherical; takunshishe wayomo, long and thin, with flesh drier and of superior flavor. The squash is planted from seed and bears in three months. As soon as the fruit is ripe the seeds are planted again so that a relatively continuous supply will be on hand all the year around. The squash is eaten only boiled; it is never dried or made into bread or cake.

Maize (awashi) of red (kuwata) and white (tamuneng awashi) varieties is raised. The seed is planted in small hills made with the hoe. While still green, the corn may be roasted on the cob in the husks; the ear is simply stuck among the hot ashes of a fire. When ripe, the kernels are removed from the cob with the hands

[1] *Dioscorea* sp.

[2] For a discussion of the probable introduction of this type of cane mill by negroes and for its distribution in South America, see Nordenskiöld, 1930, *Modifications of Indian Culture through Inventions and Loans.*

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252 and pounded in a wooden mortar with a wooden pestle to make
243 corn meal (awashi apopo). This meal may be mixed with cane juice and baked into a cake on the pan or it may be boiled and eaten hot like porridge.

245 Limes (idiyoma) are grown in the fields. The seeds are scat-
[272] tered on the ground and seedlings replanted. Lime juice is mixed with water to make a sort of limeade. Bina plants (see section on Religion) are also grown in the fields.

The papaiya (*Carica papaya*) is grown in fields and also in house
[757] clearings. The fruit is eaten raw when ripe. In the green state the rind is boiled and considered a good regulator for stomachic troubles. The leaves are sometimes dried and rolled into cigarettes,
249 alone or with tobacco leaves. Tobacco plants are grown from seedlings in the agricultural fields. (See section on Stimulants.)

In addition to the foregoing food products, the kraua grass plant is grown in the fields. The leaves of this plant resemble those of the pineapple and, as stated heretofore, are shredded so that the fibre may be used in making cord and string. It is planted from suckers in the same way as the pineapple.

244 Under the head of agriculture must be considered three other
263 species of plants which are grown, not in the agricultural fields proper, but in the clearing which surrounds the house. The pepper (pawmi)[1] is an important part of the Carib menu and together with cassarip furnishes the only condiment, with the exception of occasional trade salt, which is used by the natives. Five varieties
[824] of pepper are cultivated: poroporo, big, round, red, very hot; kawnamu, small, green; sidimya, very small and red; yanakatu, long, thin, and green; arapo, long, green (creole, lady finger). They are planted from seeds in holes made with a stick. They are cooked with meat and vegetables in the pepper pot, and are also eaten raw as garnishing in sandwiches of meat or fish and cassava
[757] bread. As a remedy for headache a feather is rubbed in the pulp of a pepper and drawn across the eyes. Pepper juice is dropped in
276 the eyes for headaches. Aremi emu (magicians) drink a mixture of pepper juice and water to induce the psychic state necessary for communication with the supernatural powers.

244 The calabash bushes are a familiar shrub in all house clearings
824 (kwa'i, calabash; kwa'yepwi, calabash bush). Four types of

[1] *Capsicum* sp.

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(Freely: Do not look into my face that way, for, if you do, I shall never be able to forget you)[1].

As the affair progresses, the participants of course become progressively influenced by the drink, which is not intrinsically very strong, but which when taken in large quantities, steadily, for several hours produces all degrees of drunkenness. Restraints which are ordinarily practised are relaxed. On the one hand, an atmosphere of good fellowship prevails, individuals borrowing goods and taking privileges which would not even be mentioned during soberer hours. On the other hand, suppressed grudges are often brought to the surface and accounts settled with blows, a form of action which is seldom taken by a sober Carib. Men and women normally are extremely modest about exposing their sexual organs, even to members of their own sex, but during a drinking spree they can be seen urinating publicly and making jokes about it. However, I have seen no example of the practise which writers on the Guiana Indians have so frequently mentioned, namely, vomiting in order to increase one's drinking capacity. As the evening wears on the more enterprising men have usually arranged trysts with girls or women. The festivities gradually die a normal death as these couples slip off to their rendezvous, leaving the remainder of the party to drop into drunken sleep.

A spree continues until the supply of drink is exhausted. This is usually two or three days, and during this time the program of activity outlined above is vigorously kept up. When the beverage supply has come to an end the participants in the spree usually get into their hammocks and spend about twenty-four hours sleeping off the effects of the orgy before returning to their own homes.

The several forms of alcoholic stimulant have been described above. Tobacco remains to be mentioned. The tobacco plants grown by the Indians are of medium size, both as to height and leaves. They are planted from seed in the fields, and seedlings are sometimes, though not invariably, replanted after they have attained a height of a few inches. The great curse of the tobacco plants is a ground worm which destroys the roots. It is believed that planting the seed during the dark of the moon is favorable

[1] The author does not have sufficient familiarity with the Carib language to vouch completely for either the transliterations or the translations of these songs, which were obtained through interpreters. They have, however, been checked with three interpreters.

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249 because of the fact that worms are supposed to lay their eggs only
825 during the full moon. At intervals the soil around the roots is soaked with haiari juice (a fish poison), which is believed to kill the worms. When they have reached a proper size the leaves are
276 picked one by one. If the crop is plentiful, they are hung from the crossbeams of the house, over the fireplace, where they will be gradually dried and smoked. After being thus cured for a few weeks or months they may be twisted into coils, or "plugs," somewhat like "navy twist." Other growers simply make the leaves into small rectangular bales tied together with cord. If the crop is poor or the supply of smoking tobacco small, the leaves may be used green. In such a case, which is not infrequent owing to the improvident ways of the husbandmen, a green leaf is held in the hands over a bed of coals until it has been partially dried out and toasted a spotty brown color. It is then wrapped into a cigarette directly. In all cases the action of wood smoke is believed to have a mellowing effect on the tobacco.

Tobacco is used only for smoking purposes in the course of everyday life. (Tobacco juice is imbibed by medicine men and others on certain religious occasions, and it may be dropped in the eyes for medicinal purposes.) Tobacco is smoked exclusively
[824] in cigarettes by the natives. The inside bark of the kakareli tree (*Lecythis* sp.) is used as wrapper. Every man has a supply of this bark about his house, cut into long strips about one and one half inches broad. The outer bark of the tree is removed, and the inner bark taken off in these strips. One end of the strip is beaten with a stick or cutlass in order to separate the several layers of paper-thin tissue of which it is composed. A strip of tissue thus separated can be peeled off when it is to be used, and smoothed by laying it on a flat surface and scraping it with the edge of the cutlass. The tobacco is rolled into a thin, pencil-like cylinder between the palms, and then rolled into a strip of kakareli bark ten to twelve inches long. The tube of bark is tied together at each end and in the middle by thin threads of kakareli bark, which are stripped off the edge of the wrapper. A cigarette a foot or somewhat less in length is thus made, which has a not unpleasant taste. The bark apparently mitigates the strength and bite of the tobacco.

Pipes, cigars, chewing and other methods of employing tobacco are not used by the natives.